

Design and modelling of a beta-type stirling engine for waste heat recovery

ABSTRACT

Apart from development of renewable energy, existing energy resources can be better utilized and used efficiently by recovering thermal waste sources released into atmosphere from many industrial processes. It is crucial that a waste heat recovery system is implemented as a mechanism to recover waste heat that is released to the environment and transform it into another form of energy that can be used more economically. These thermal sources range from low to moderate temperature heat, which can be exploited into usable mechanical power. Therefore, this paper intends to design and model a Stirling engine that can recover waste heat from various thermal sources by using CFD. The design is then validated so that it can be used in the estimation of total heat recovered by this type of engine.

Keyword: CFD; Heat transfer; Stirling engine; Waste heat